THE SOCIAL ADJUSTMENT OF GIFTED CHILDREN IN ONTARIO SCHOOLS

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It reflects the views of the authors and not necessarily those of the Ministry.

The Honourable Sean Conway, Minister
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ABSTRACT

Considerable polarization has developed regarding the major educational alternatives for gifted children. The present project examined social and personal concomitants of exceptional academic capability, specifically self-concept, peer acceptance, and attitude toward school, in the context of various educational program options.

Participants were drawn from 39 regular elementary and high schools. The self-contained gifted sample consisted of seventy-one Grade 5, fifty-nine Grade 8, and twenty Grade 10 pupils in classes for the gifted. The integrated sample consisted of seventy-two Grade 5, fifty-nine Grade 8, and seventy-three Grade 10 students who met the IQ criteria for identification as gifted, but were not in special classes. The control group consisted of two classmates for each integrated gifted pupil. Control students were selected from pupils who did not meet the gifted identification criteria. One of the two controls was selected at random. The other was matched to the gifted subject on the basis of sex, age, and years in school.

Each gifted and control subject completed an age-appropriate self-report scale of social competence and a rating scale regarding feelings about school. Peer nominations for social competence were also obtained from children in the integrated classes, that is, gifted and control subjects as well as their participating classmates.

The integrated gifted children at all three grade levels achieved higher scores of academic self-concept than either the self-contained gifted or control groups. There were no differences between the groups in terms of social self-concept or physical self-concept. In Grade 5 only, the integrated gifted were rated by their classmates as higher in social competence than the controls. There were no significant differences between gifted and control samples in this regard in Grades 8 or 10. Gifted children were less popular in classes where there were large differences in IQ between the gifted and control subjects. While there were no significant differences in terms of attitude towards school between the groups studied, feelings toward school became less positive as age increased. There were few salient sex differences in the above findings.

INTRODUCTION

Sensitivity and concern for the educational and personal needs of the gifted child have increased sharply in recent years. The resultant debate concerning program options for the gifted (special school, self-contained class, resource/withdrawal programming within regular class) has brought with it considerable polarization. There has been very little research into the relative advantages of either self-contained or integrated programs. The goal of the project reported herein was to investigate the social and personal concomitants of exceptional academic capability in the context of various Ontario school settings. A comprehensive focus was adopted in order to accommodate the possibility that each setting has its own advantages and disadvantages, rather than assuming that one option would be deemed to be globally superior to all others. It should be noted that this study was designed to provide data on several dimensions of the social relations and emotional functioning of academically talented pupils. The results are not necessarily indicative of the social relations of exceptionally creative or artistically talented pupils. Furthermore, only the children's social-emotional development was explored; their intellectual development and academic progress were not considered herein. Therefore, this study should not be considered an evaluation of any program, but rather an evaluation of the effects of various program options on social-emotional development.

Self-concept

In past research, one of the primary indices of the socio-emotional adjustment of gifted children has been self-concept. A review of the literature, however, reveals inconsistent findings. Some of these inconsistencies appear to be the result of methodological limitations such as the lack of an adequate non-gifted comparison group (e.g. Bracken, 1980; Colangelo and Pfleger, 1978; Tidwell, 1980) and/or inappropriate comparison to the standardization sample for the self-concept measure (e.g. Berndt, Kaiser, and Van Aalst, 1982; Janos, Fung, and Robinson, 1985; Ketcham and Snyder, 1977; Maddux, Scheiber, and Bass, 1982). As a result, only studies which compared either similar populations of gifted children in different programs or gifted children to an adequate non-gifted control group are reviewed here.

Of the studies which met these inclusion criteria, some found gifted children to exhibit higher levels of self-concept than their non-gifted peers (Lehman and Erdwins, 1981; Maugh, 1977; McQuilkin, 1981; O'Such, Twyla, and Havertape, 1979). In contrast, other investigators have reported lower self-concepts for gifted children compared to their regular school peers (Fults, 1981; Rodgers, 1980; Stopper, 1979). Finally, there are researchers who have found no significant differences in the self-concepts of these two populations (Klein and Cantor, 1976; Miller, 1983).

There are many factors which may underlie these seemingly conflicting results. First, investigators have used a variety of criteria to identify gifted children as well as differing statistical procedures to analyse their data. Second, potentially important moderating variables such as grade, sex, sociometric status, and classroom setting have been infrequently measured and controlled statistically. That these variables are of relevance is indicated by the fact that some studies have reported sex and grade differences in the relations between giftedness and self-concept. For instance, Kelly and Colangelo (1984) found that gifted males in a junior high special program had higher levels of global and academic self-concept than comparable average students while gifted females from the same classes did not. Milgram and Milgram (1976) reported an advantage for gifted children in terms of self-concept for Grades 4 and 6. However, this advantage was actually reversed in Grades 7 and 8 with gifted children having more negative feelings of personal worth and a poorer sense of identity than the comparison group.

Besides gender and grade, it may also be important to consider the type of program or educational setting in which the gifted child is placed. For instance, all three studies cited earlier as having found lower levels of self-concept for gifted children (Fults, 1981; Rodgers, 1980; Stopper, 1979) compared gifted children in special programs to non-gifted children in regular classrooms. That this lower self-concept of gifted children may be due, at least in part, to program effects is suggested by Stopper's (1979) results. There were no self-concept differences between gifted and non-gifted children in regular classrooms.

However, gifted children in self-contained classes had lower levels of self-concept than either the gifted or non-gifted regular class sample. Similarly, Rogers (1979), when tracing the effects of placement, found self-concept to drop upon placement in special classes while non-placed gifted children's self-concept remained stable.

The move from the regular class to a special program entails a transition from a heterogeneous to a more homogeneous ability group. Social comparison theory (Festinger, 1954) predicts that, with this transition, the self-concepts of gifted children should decrease since comparison will now be with a group with generally higher ability levels. Thus, social comparison theory fits well with the results of a study by Coleman and Fults (1982) who actually manipulated, experimentally, the program placement of Grade 4 to 6 gifted children. Their findings revealed that, although overall the gifted students exhibited higher levels of self-concept than the regular students, gifted children who had been randomly assigned to self-contained classes had lower self-concepts than gifted children who had remained in the integrated classroom. Furthermore, when the children in the self-contained programs were returned to regular classes, their self-concepts rose. Other researchers have reported similar depression of self-concept for gifted children placed in a special class setting (McQuilkin, 1981; Rodgers, 1980; Stopper, 1979). In contrast, Maddux *et al.* (1982) reported only a small disadvantage for Grade 6 gifted children in special programs and no disadvantage for Grade 5 gifted children so placed. A similar lack of program effects has been reported by Evans and Marken (1982), Karnes and Wherry (1981), and Kolloff and Feldhusen (1984). Finally, Kulik and Kulik (1982) conducted a meta-analysis on fifteen studies which investigated the self-concept of gifted students in these two settings. Seven of these studies showed a slight advantage for gifted students in special programs. Six found slightly lower self-concepts in similarly placed gifted children, and two reported no differences between placed and non-placed gifted children. Since the direction of program effects was variable and the absolute effects size small, these authors concluded that the effects of special programming on self-concept was minor.

This issue has not really been adequately resolved and further research is necessary to determine why gifted children's self-concept appears to suffer in some special programs while not in others. As Evans and Marken (1982) note, one cannot assume that all special programs are equivalent. The lack of consistent findings may reflect the lack of standardization across programs more than a lack of a potential relation between educational setting and self-concept levels of gifted children. As well, age and sex differences in this respect have not been adequately clarified.

Furthermore, greater attention needs to be given to methodological issues concerning the measurement of self-concept. A major limitation of self-concept research on the gifted is that most studies report measures of general self-concept (GSC). Since the more specific measures of self-concept are typically the most highly correlated with relevant external variables (e.g. Shavelson and Bolus, 1982), one might well expect academic self-concept to be most related to giftedness. Moreover, when the other facets of self-concept are considered (e.g. physical self-concept and social self-concept), compensatory effects may come into play (Shavelson, Hubner, and Stanton, 1976). Such compensatory processes may be implicated in the finding that with Grade 4 to 6 children, academic achievement was positively related to academic self-concept (ASC), but negatively related to physical self-concept (PSC) and social self-concept (SSC) (Marx and Winne, 1980). Winne, Woodlands, and Wong (1982) found that, whereas regular and gifted children showed higher levels of ASC than PSC or SSC, the reverse held for learning disabled children. However, evidence for such compensation across different domains of self-concept has not been conclusive. For instance, while Ross and Parker (1980) found that gifted children had higher levels of academic self-concept than social self-concept, the absence of a non-gifted comparison group limits the interpretations which can be made of these findings.

While the educational environment has the potential to affect the self-concept of both gifted and non-gifted children, the processes and even the expected direction of these influences remain unclear. There is still a definite need for more research concerning the self-concept of gifted children because of methodological limitations in previous research, the paucity of research into age and sex differences in gifted children's self-concept, the limited attention given to domain-specific self-concepts such as academic self-concept and social self-concept as well as the lack of extensive studies conducted in Ontario.

This study sought to address the following questions about self-concept:

1. Do the self-concepts (academic, social, physical, and global) of bright students differ markedly from those of their less academically capable peers?
2. Does educational setting or program affect the self-concepts of gifted children?
3. Are there important age or sex differences with regard to the above-mentioned relations? Do any of these effects covary with IQ even among exceptionally bright children?

Social Status of the Gifted

The second socio-emotional adjustment index which has received considerable attention in giftedness research is social acceptance or peer-group status. Challenging the folk notion of gifted children as social isolates, many researchers have endeavoured to establish the social status of the gifted with their non-gifted peers. Most of the research in this area has focused on elementary school children. A review of this literature reveals that, overall, gifted children are well liked by the non-gifted children in their classes (e.g. Gallagher, 1958; Gallagher and Crowder, 1957; Grace and Booth, 1958; Karamessinis, 1980; Killian, 1981; Williams, 1958; Wood, 1966). These students are often perceived as leaders by both their average (Lytle and Campbell, 1979) and moderately gifted (Pasternak and Silvey, 1969) peers. In addition, gifted children have been found to interact well with both gifted and non-gifted children; they receive more friendship nominations than non-gifted children from both groups (Norwood, 1977). Finally, several reviews (Austin and Draper, 1981; Gamble, 1975) conclude that gifted elementary children were indeed well accepted by their non-gifted peers. However, the strength of these results may vary with gender: Solano (1976) found gifted boys to be better liked than gifted girls by their regular-class peers.

While there appears to be ample evidence for heightened popularity for gifted children, at least at the elementary school level, Austin and Draper (1981) as well as Gallagher (1958) have suggested the possibility of a maximum IQ level (150) above which popularity seems to decline. Importantly, the most highly gifted children were not only less popular than moderately gifted children; they were less popular than classmates of average intelligence. Thus, this finding is consistent with the fact that students with moderately high marks have been found to receive better ratings from peers than students with **either** very low or very high marks (Keisler, 1955). Furthermore, Hollingworth (1926, 1931, 1942) found that a substantial percentage of children with IQs greater than 180 suffered psychological difficulties, especially at ages 4 to 9. Similar results have been reported by Janos (1983) and Selig (1959). Hollingworth also found that the greater the IQ difference between the gifted and non-gifted children in a group, the lower the degree of acceptance of the gifted children.

In contrast with the social status of younger gifted children, the peer relationships of gifted children in high school have received little attention. In an early study by Keisler (1955), high ability girls were found to be less popular with opposite sex peers than were average ability girls. This relation did not hold for high ability boys, suggesting an interesting gender difference. However, ability level did not affect same-sex peer ratings for either gifted boys or girls. As well, gifted girls were rated by all peers as being more considerate and less conceited than average ability girls. Thus, the social disadvantage for gifted adolescent females appeared to be specific and somewhat limited. In another early study, Coleman (1961) found athletic ability for adolescent boys and physical attractiveness for adolescent girls to have the strongest relation to peer acceptance, again suggesting sex differences in the variables influencing popularity. However, as both studies may be somewhat dated in the light of changing gender-role perceptions, replication may be warranted.

Coleman's (1961) data suggest that academic ability in adolescence is not the primary determinant of peer acceptance. As such, these data are consistent with Tannenbaum's (1963) conclusion that academic superiority was not a stigma in the adolescent peer group if accompanied by other acceptable attributes such as an interest in sports. However, when accompanied by less desirable attributes such as studiousness, academic superiority was far less valued (Passow and Goldberg, 1962).

It would therefore appear that in adolescence, giftedness may be a mixed blessing. In fact, gifted Grade 10 students have been found to view themselves as unpopular with their peers (Tidwell, 1980). Furthermore, National Merit scholars have been found to perceive themselves as less friendly, less sociable, and less co-operative than their peers; parents and teachers concurred (Nichols, 1967; Nichols and Davis, 1964). Finally, Monks and Ferguson (1983), in reviewing analyses of the Terman sample, also found that the most successful gifted group rated themselves (during adolescence) as having more difficulty making friends and entering social activities.

There may be some reason to believe that placement of gifted children in self-contained classrooms may also affect peer acceptance. For instance, Maddux *et al.* (1982), found that initial placement in a totally self-contained program resulted in less favourable peer ratings for the gifted in their first year (Grade 5). However, by Grade 6, these peer ratings had improved, suggesting that with time and increasing familiarity, the peer relations in these special classes tend to normalize. Gallagher, Greenham, Darnes, and King (1960) also noted a decrease in popularity for 54 gifted elementary children following initiation into a special program. Finally, Austin and Draper (1981), in their review of the literature, found that when the gifted were enrolled in self-contained special programs, two separate social systems appeared to operate: the gifted more often selected gifted peers as friends and non-gifted children selected more friends from equal ability peers. Additional support for these findings has been reported by Barbe and Chambers (1964), and Mann (1957). However, Ford (1978) found that 400 gifted elementary-school children who participated in a **part-time** special program, were generally satisfied, with few reports of conflict with regular class teachers or antagonism from friends arising from such placement.

Considering all of the studies which have compared the peer relations of gifted students in different programs, it would appear that special programming may influence social acceptance, but that the nature of these effects may vary with the degree of integration into regular classes, and with time. Again, further research is necessary to clarify these effects as well as variables which may affect the direct relation between giftedness and overall peer acceptance. With these points in mind, the following research questions concerning the peer relations of gifted children were posed:

1. Does social participation, ease in social situations and/or assertive behaviour of bright students differ markedly from those of their less academically capable peers?
2. How well are gifted children in integrated settings accepted by their peers?
3. What differentiates the unhappy and/or unaccepted bright child from his or her happy, accepted peers?
4. Are there important age or sex differences with regard to the above-mentioned relations? Do any of these effects covary with IQ even among exceptionally bright children?

Attitudes Toward School

One other adjustment variable which may be of educational relevance is the gifted child's attitudes toward school. Unfortunately, there has been a lack of consistency among research findings. This, along with a paucity of relevant research makes it impossible to draw any firm conclusions concerning the relation between giftedness and attitudes toward school. Two studies (Bracken, 1980; Tidwell, 1980) found that gifted students enrolled full-time in special classes had fairly positive attitudes toward school. Unfortunately, neither of these studies included an adequate comparison group of non-gifted students. In a study which did employ this control, Maugh (1977) found that gifted students placed in special classes displayed less favourable attitudes toward school than their non-gifted counterparts. However, Miller (1983) and Levey (1980) found no significant differences in attitudes between these two populations. Finally, in a meta-analysis of 52 studies concerned with the effects of ability grouping, Kulik and Kulik (1982) found that, while students liked individual school subjects more when they studied them with peers of similar ability, overall attitudes toward school seemed little affected by such placements.

Given these conflicting results, and the probable educational relevance of attitudes toward school, it was felt that further investigation of this relationship was warranted. The present study was therefore designed to evaluate whether gifted children in integrated classes, gifted children in self-contained classes, and control children differed in their attitudes toward school.

METHOD

Participants

The self-contained sample consisted of seventy-one Grade 5, fifty-nine Grade 8, and twenty Grade 10 pupils enrolled in special classes for the gifted. These children had achieved an IQ score of 129 or higher on the Henmon-Nelson Test of Mental Ability or above the 97th percentile on the Verbal section of the Canadian Cognitive Abilities Test (CCAT) regularly administered as part of the school group testing program. The integrated sample consisted of seventy-two Grade 5, fifty-nine Grade 8, and seventy-three Grade 10 students who met the same IQ criteria, but were not enrolled in special classes for gifted students. It is important to note that no such special classes existed at the time of the study in the school system from which this second, integrated group came; thus there was no self-selection factor. Both were public school boards in the Regional Municipality of Ottawa-Carleton; only schools in urban areas were included.

The comparison group consisted of two classmates for each of the integrated gifted pupils. These control group children did not meet the identification criteria, but had agreed to participate in the study. For each integrated gifted subject, one classmate was chosen at random to serve as a control, and another classmate was matched to each gifted subject on the basis of sex, age, and number of years in the school. It would have been extremely difficult to locate a suitable control group for the self-contained gifted sample since these children were transferred from their feeder schools. However, it was assumed that the control groups, as specified above, were essentially comparable not only to the integrated group, but also to the self-contained sample on most measures except level of academic talent.

Table 1 shows the sex, age, and IQ distributions of the different groups. In general, all four groups were similar in sex and age composition; IQ differences were as expected. One major difference in sample size was due to a decision not to participate by one of the two high schools with self-contained classes. As a result, there were only twenty Grade 10 students from self-contained classes compared to 73 from integrated classes.

Instruments

The Perceived Competence Scale for Children (PCSC; Harter, 1981). The PCSC is a 28-item self-report instrument designed to measure the elementary school-aged child's perceived competence across the cognitive (academic), social, and physical domains, as well as general self-esteem. These subscales are non-overlapping, and have internal consistencies ranging from 0.73 to 0.86. Test-retest reliability coefficients from 0.69 to 0.87 have been reported (Harter, 1982). Validity data reveal congruence coefficients among different samples ranging from 0.67 to 0.84 (Harter, 1981a), correlations between teacher and student ratings ranging from 0.43 to 0.73 (Harter, Silon, and Pike, 1980) and a predictive validity coefficient of 0.72 for the Challenge subscale (Harter, 1980). This instrument was used for children in Grades 5 and 8 in the present study.

Self-Description Questionnaire III (SDQ; Marsh and O'Neill, 1984). The SDQ is a self-report instrument designed to measure the perceived competence of adolescents and was used in this study with Grade 10 students. The profile provides scores for several aspects of self-concept: academic, social (opposite sex), social (same sex), physical appearance, physical ability, and general self-concept. Explanatory and confirmatory factor analyses of the SDQIII have yielded well-defined social and physical self-concept facets that were relatively distinct (mean $\underline{r}$=0.15); internal consistency reliability coefficients ranging from 0.81 to 0.96 (mean alpha=0.89) have been reported (Marsh and O'Neill, 1984). The authors have

also found convergent validity coefficients ranging from 0.45 to 0.78 (mean $\underline{r}$=0.56) from inferred self-concept ratings by significant others.

Table 1
Descriptive Statistics: Sex, Age, IQ by Grade

	SEX %				MEAN AGE				MEAN IQ			
	IG	SG	MC	RC	IG	SG	MC	RC	IG	SG	MC	RC
GRADE 5												
Boys	47.2	47.9	51.4	47.9	9.94	9.88	9.95	10.12	132.65	137.31	112.43	108.80
Girls	52.8	52.1	48.6	52.1	9.84	9.87	9.94	10.00	131.55	136.25	109.83	112.00
Total n	(72)	(71)	(72)	(71)								
GRADE 8												
Boys	44.1	50.8	37.3	43.1	13.04	12.80	13.18	13.20	133.31	135.89	106.71	113.75
Girls	55.9	49.2	62.7	56.9	13.06	12.76	13.08	13.06	133.21	134.75	110.03	111.32
Total n	(59)	(59)	(59)	(58)								
GRADE 10												
Boys	42.5	65.0	42.4	46.9	14.87	14.50	14.93	14.83	131.29	134.00	113.32	114.63
Girls	57.5	35.0	57.6	53.1	14.93	14.71	15.00	15.00	130.41	133.00	114.74	112.13
Total n	(73)	(20)	(66)	(64)								

IG: integrated gifted
SG: gifted in self-contained classrooms
MC: matched control
RC: random control

The Minnesota Revision of the Class Play Revised (MRCP; Masten and Morrison, 1981). The MRCP is a peer nomination instrument for which elementary school-aged children select classmates for positive and negative roles in an imaginary class play. The revised version of the class play includes 15 positive roles which load on a factor of sociability/leadership, and 15 negative roles which load on two factors (aggressive/disruptive and sensitive/isolated). As a reminder to the children of who is eligible for votes, an alphabetical roster listing all students in the class (including absentees, but excluding those for whom parental consent was not obtained) was included with the answer sheet. Test-retest reliability of the MRCP over a 6-month period has been shown to range from 0.77 to 0.87 for each of its three underlying factors. Validity of the instrument has been demonstrated by moderately high correlations between peer nomination scores and teacher ratings of social competence. This instrument was used for children in Grades 5 and 8.

Adjustment Scales for Sociometric Evaluation of Secondary-School Students (ASSESS; Prinz, Swan, Liebert, Weintraub, and Neal, 1978). This peer nomination instrument was used to evaluate the Grade 10 samples. Five scales have been developed and cross-validated: aggression/disruptiveness, withdrawal, anxiety, social competence, and academic difficulty. The aggression/disruptiveness, withdrawal, and social competence scales are quite similar to the three factors of the MRCP. There is evidence of good internal consistency and test-retest reliability for this instrument (Prinz *et al.*, 1978).

The Social Behavior Assessment - Revised (SBA; Byrne and Schneider, 1984; 1986). This shortened version of the SBA (Stephens, 1979) is a teacher rating scale consisting of 71 items based on three underlying factors: social participation/conversation, academic responsibility, and self-control. The original longer version of the SBA has been shown to have a high degree of agreement between trained raters; the reliability coefficients have ranged from 0.89 to 0.96 on the four broad behavioural categories,

and from 0.76 to 0.97 for the thirty-six subcategories (LaNunziata, Hill, and Krause, 1979; Prichard, Wallbrown, and Maxwell, 1979).

The Child Behavior Checklist (CBC; Achenbach, 1978; Achenbach and Edelbrock, 1979). The CBC is a parent rating scale consisting of 138 items that provide a profile of both behavioural problems and social competence. There are nine clinical and three social competence scales; only two of the social competence scales were used here. The two scales used were social and activities; the school scale was not included because our samples were chosen on the basis of academic ability, thus precluding a full distribution on the school scale. Satisfactory reliability and validity data have been reported for the CBC (see Sattler, 1982). One parent only was asked to complete this scale for each child; however, some parents completed it together. This instrument was used for all three grades in this study.

Feelings About School (FAS; Bills, 1975). The instrument used in this study was a 50-item short version of the item scale. The FAS is one of a group of affective measures which together comprise *A System for Assessing Affectivity* (Bills, 1975). The instrument is designed to measure a student's attitudes toward school with respect to academic subjects, peers, teachers, overall milieu, scholastic standards, and provision of extracurricular activities. Reliability based on both split-half and internal consistency measures have yielded coefficients of 0.88 and 0.91, respectively. This questionnaire was administered to all three grades in this study.

Procedure

After parental consent was received, teachers, and parents were given the rating forms to complete on all gifted and control subjects. The peer nomination forms were administered in each class which had at least one integrated gifted child. Peer nominations were not collected in self-contained classes because of the quite different reference groups for the talented children in self-contained classrooms and because the primary question of interest involved the adequacy of gifted children's social adjustment relative to that of the children not identified as gifted. All gifted and control children, however, completed the self-report rating scales appropriate to their age groups.

RESULTS

Organization of Results Section

This section begins with comparisons of the two control groups; these comparisons were effected in order to determine whether the control groups should be combined in subsequent statistical analysis. Results of the main analyses of self, peer, and teacher ratings of social competence appear next; these are presented separately by grade.

The results of several subsidiary analyses follow. Discriminant analyses were performed to determine which social participation variables differentiated popular from non-popular gifted youngsters, as well as happy from unhappy gifted youngsters. Correlations between the intellectual and social competence of the gifted participants appear next, followed by analyses pertaining to the social acceptance of the gifted subjects as a function of the IQ difference between themselves and their classmates.

The results section concludes with the findings pertaining to feelings about school.

Comparison of Control Groups

Descriptive statistics (age, sex, IQ) for each group are contained in Table 1 (see Method). Table 2 displays the Sex by Status MANOVA comparisons of the two control groups with respect to peer ratings and perceived self-concept. A separate MANOVA was performed for each grade level, and for the peer ratings and self-concept scores, respectively. For Grades 8 and 10, the control groups were not significantly different from each other. In Grade 5, however, there were some important differences between them. The multivariate F for the MRCP peer ratings was significant for group status. Univariate analyses indicated that mean MRCP withdrawal ratings were higher for the random control (RC) group than for the matched control (MC) group.

The multivariate F for self-concept scores was also significant, with univariate analyses indicating that mean perceived social competence scores were higher for the MC group than the RC group. Although there are no theoretical reasons why these two groups should be different in the manner shown, we decided that the differences were important enough to preclude combining the two groups in further analyses. In order to maintain consistency, the two control groups were not combined at any grade level.

MANOVA Results: Self, Peer, and Teacher Ratings

Multivariate analyses of variance were performed separately on three groups of measures: the self-concept scales, the peer rating scale factors, and the teacher rating scales. Data from each grade level were analysed separately. A 4 (group status) by 2 (sex) model was used for the MANOVAs. To reduce experimental and comparison error rates, MANOVAs were followed by univariate ANOVAs only if the overall multivariate F was significant (Hummel and Sligo, 1971). While these results are presented separately by grade below, the mean scores for all three grades on social self-concept and peer nominations for social competence are depicted graphically in Figures 1, 2, and 3.

Grade 5

Results for the Group Effect

Self-concept. MANOVAs for the group status effect are presented in Table 3. The MANOVA main effect for group status was significant. Subsequent univariate analyses indicated that the groups differed in academic self-concept. Tukey post-hoc analyses showed that the academic self-concept differences were attributable to the integrated gifted group having significantly higher self-concept scores than all of the other groups (including self-contained gifted).

Peer Ratings. As indicated in Table 3 the MANOVA main effect for subject status was signficant. Univariate analyses of variance indicated that peer ratings of aggression and social competence were significantly different as a function of group status. Post-hoc analyses showed that the integrated gifted group had lower ratings on aggression than did the random control group, but higher ratings on social competence than did either of the control groups.

Table 2
Control Groups Compared: Self- and Peer Ratings

Dependent Variable	MEANS: BOYS		MEANS: GIRLS		Sex		MANOVAs Status		Sex x Status	
	MC	RC	MC	RC	F	p	F	p	F	p
GRADE 5										
Self-concept					1.94[1]	NS	4.65[1]	0.003	1.31[1]	NS
General	22.1	18.8	20.2	20.3			3.75	NS		
Academic	20.8	20.6	19.6	20.5			0.66	NS		
Social	20.5	17.6	20.8	19.3			5.63	.02		
Physical	20.4	19.8	18.8	19.8			0.06	NS		
Peer Ratings					5.14[1]	0.003	2.72[1]	.05	0.55[1]	NS
Aggression	13.2	21.1	7.5	9.8	13.24	0.001	3.15	NS		
Withdrawal	6.1	11.0	7.9	12.0	0.63	NS	0.59	.02		
Social Comp.	14.4	13.8	15.3	12.9	0.00	NS	0.52	NS		
GRADE 8										
Self-Concept					3.83[1]	0.007	1.75[1]	NS	1.60[1]	NS
General	21.7	20.0	19.1	18.8	5.60	0.03				
Academic	21.4	21.0	18.6	20.4	5.01	0.03				
Social	20.6	19.1	20.2	20.7	0.48	NS				
Physical	19.4	21.1	18.7	18.8	2.54	NS				
Peer Ratings					0.76[1]	NS	1.32[1]	NS	0.47[1]	NS
Aggression	9.8	13.2	12.0	13.1						
Withdrawal	15.1	14.0	14.2	8.5						
Social Comp.	17.0	22.8	15.8	18.9						
GRADE 10										
Self-Concept					5.09[1]	0.001	0.72[1]	NS	0.81[1]	NS
General	71.2	75.1	66.2	63.4	15.08	0.001				
Academic	56.8	54.0	55.5	51.5	0.62	NS				
Social (opp. sex)	51.9	56.7	56.9	54.1	0.42	NS				
Social (same sex)	56.2	56.5	58.1	57.6	0.82	NS				
Physical (AP)	53.6	55.9	49.9	45.9	9.52	0.004				
Physical (AB)	61.9	64.1	56.1	58.6	4.46	0.04				
Peer Ratings					3.44[1]	0.007	0.38[1]	NS	0.91[1]	NS
Social Comp.	12.5	14.0	20.3	18.4	5.38	0.03				
Aggression	4.6	8.5	5.0	4.9	1.21	NS				
Withdrawal	13.9	12.1	6.6	7.7	8.26	0.006				
Anxiety	7.3	5.2	5.2	7.1	0.00	NS				
Academic	6.0	6.8	4.3	4.8	2.53	NS				

MC: matched control group
RC: random control group
1: multivariate Fs

Table 3
Self, Peer, and Teacher Ratings: Grade 5 Sample

Dependent Variable	MEANS: BOYS Gifted		Control		MEANS: GIRLS Gifted		Control		MANOVAs Sex		Status		Sex x Status		Tukey Test Results	
	IG	SG	MC	RC	IG	SG	MC	RC	F	p	F	p	F	p		
Self-concept									1.72[1]	NS	5.59[1]	0.001	1.02[1]	NS		
General SC	21.3	21.0	22.1	18.9	20.9	19.1	20.2	20.3			2.02	NS			IG	MC
Academic SC	23.2	21.2	20.8	20.6	23.5	20.0	19.6	20.5			9.89	0.001			RC	SG
Social SC	20.0	21.0	20.5	17.6	19.3	19.2	20.8	19.3			2.13	NS				
Physical SC	18.5	19.8	20.4	19.8	17.7	17.3	18.8	19.8			2.37	NS				
Peer Ratings									9.65[1]	0.001	4.47[1]	0.001	0.82[1]	NS		
Social Competence	20.4	-	14.4	13.9	23.4	-	15.3	12.9	0.28	NS	7.35	0.002			IG	MC
Aggression	10.4	-	13.2	21.1	6.1	-	7.5	9.8	16.31	0.001	4.53	0.02			RC	IG
Withdrawal	4.9	-	6.1	11.0	11.1	-	7.9	12.0	3.98	0.05	3.03	0.06			IG	RC
Teacher Ratings									1.25[1]	NS	3.07[1]	0.002	0.74[1]	NS		
Self-Control	74.9	72.7	74.3	68.2	74.9	74.7	73.4	72.7			3.82	0.02			IG	RC
Academic Responsibility	54.3	53.7	53.3	50.4	55.5	54.7	52.9	53.2			4.53	0.005			IG	RC
Social Participation	56.0	55.5	54.5	48.6	55.3	56.3	51.7	51.7			6.48	0.001			IG SG	RC RC

IG: integrated gifted
SG: gifted in self-contained classrooms
MC: matched control
RC: random control
1: multivariate Fs

Figure 1
Self-Perceptions of Social Competence: Means,
Grades 5 and 8

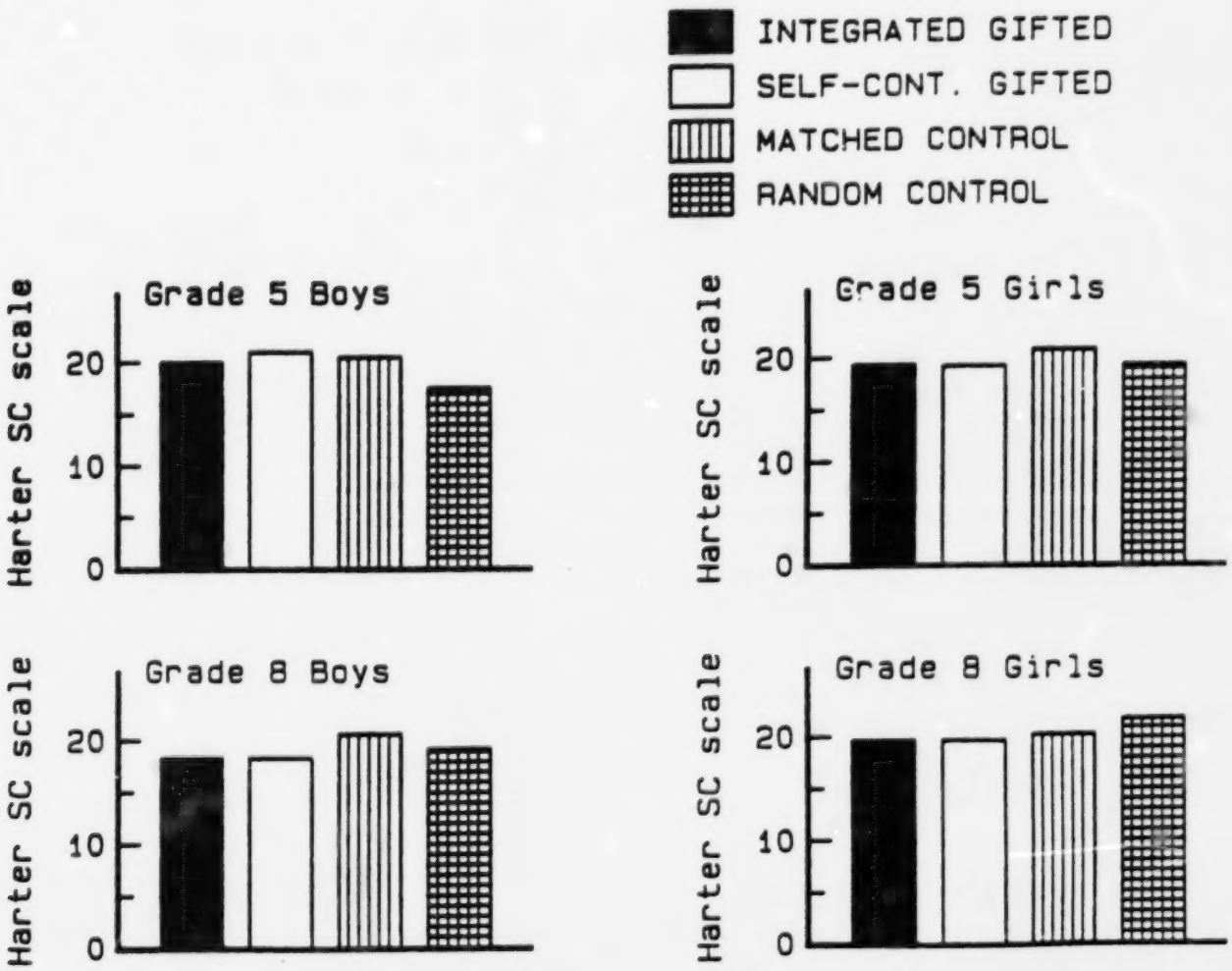


Figure 2
Self-Perceptions of Social Competence: Means,
Grade 10

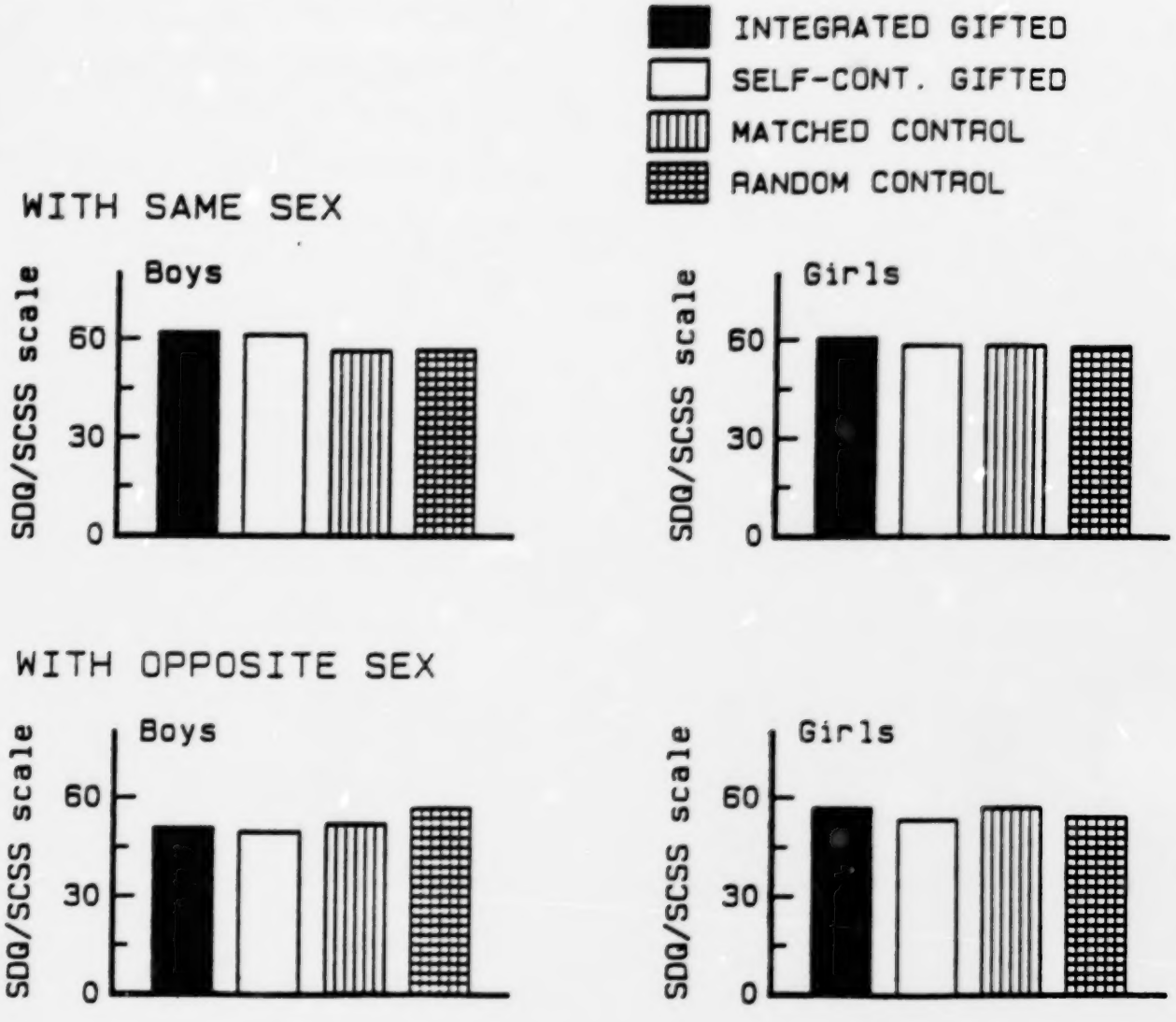
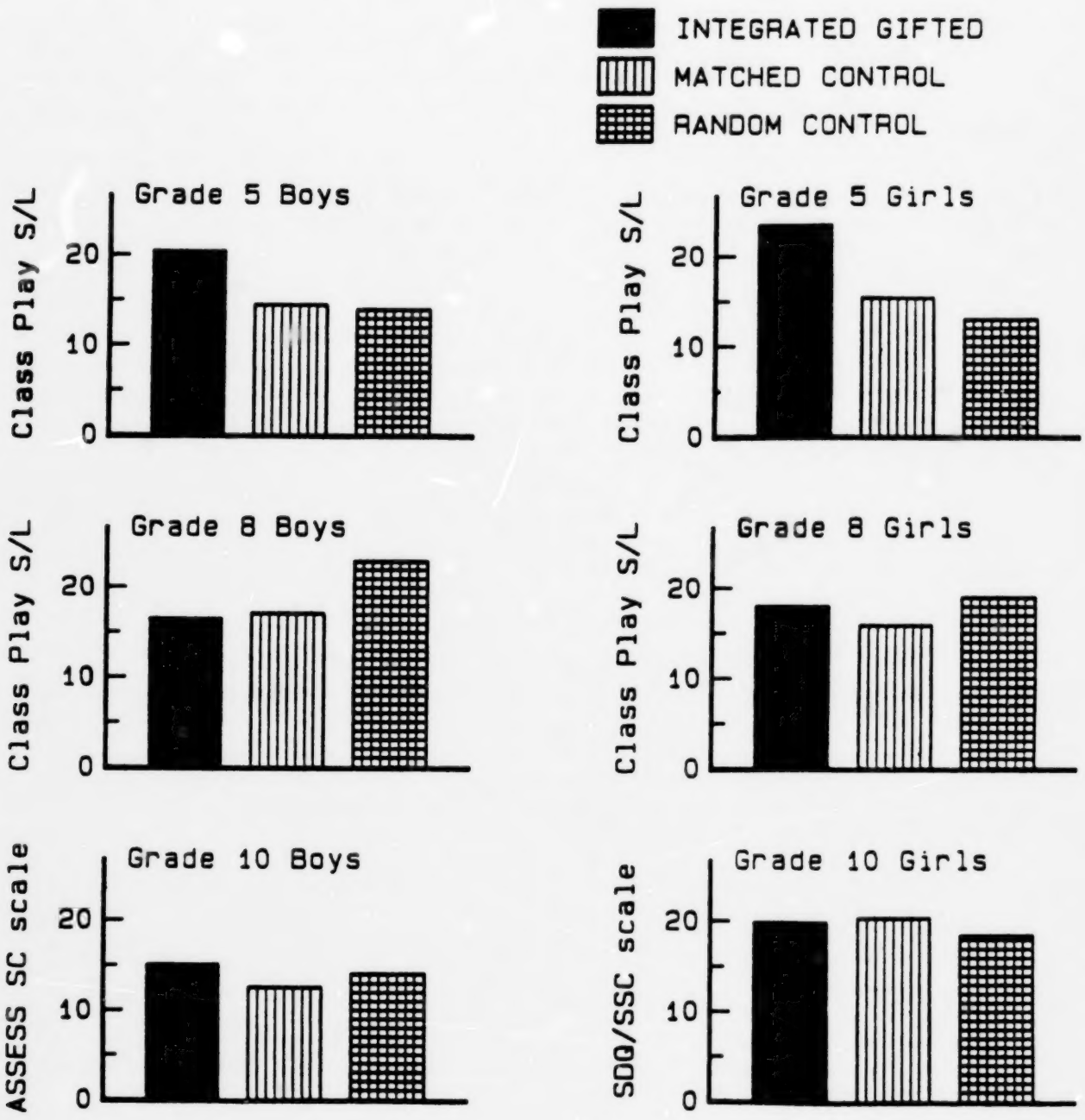


Figure 3
Peer Ratings of Social Competence: Means,
All Grades



Teacher Ratings. MANOVA results for the teacher ratings were significant for the group status main effect. Univariate analyses of variance indicated that all three of the factors significantly discriminated among groups. Post-hoc analyses showed higher ratings on self-control, academic responsibility, and social participation for the integrated gifted than for the random controls. With respect to the social participation factor, the self-contained gifted also had higher ratings than the random controls.

Results for Sex Effect

Only for the peer ratings was the MANOVA main effect for sex significant. Univariate analyses indicated that this effect was significant for the aggression and withdrawal (but not social competence) factors: boys had higher scores for aggression, girls for withdrawal.

Grade 8

Results for Group Effect

MANOVAs for the group status effect are given in Table 4. Significant differences were found in self-concept and teacher ratings; no differences were found with respect to peer ratings.

Self-concept. The MANOVA effect for group status was significant. Univariate analyses of variance indicated that there were significant differences between the subject means on the academic self-concept scores. Post-hoc analyses showed that the integrated gifted had higher scores than did all three of the other groups, including the self-contained gifted. This latter group (SG), however, had higher mean scores than did the matched control group.

Teacher Ratings. MANOVA results for the teacher ratings were significant only for the main effect of group status. Univariate analyses indicated significant differences among groups on the social participation factor, but post-hoc analyses showed no significant differences between any of the groups.

Results for Sex Effect

Only for self-concept was the MANOVA main effect for sex significant. Univariate analyses of variance indicated that the mean scores were higher for the boys than for the girls on the general and physical self-concept scores.

Grade 10

Results for the Group Effect

MANOVAs for the group status effect are given in Table 5. No teacher ratings were collected for this age group.[1]

Self-concept. The MANOVA main effect of group status was significant with univariate analyses of variance indicating that the differences were on the academic self-concept scores. Post-hoc analyses showed higher mean scores on academic self-concept for the integrated gifted (IG) group compared to the two control groups.

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[1]Secondary school teachers in rotary-format schools indicated that they did not have sufficient familiarity with their students' social relations.

Table 4
Self, Peer, and Teacher Ratings: Grade 8 Sample

Dependent Variable	MEANS: BOYS Gifted IG	SG	Control MC	RC	MEANS: GIRLS Gifted IG	SG	Control MC	RC	Sex F	p	MANOVAs Status F	p	Sex x Status F	p	Tukey Test Results
Self-concept									9.17[1]	0.001	4.82[1]	0.001	1.04[1]	NS	
General SC	20.9	20.1	21.7	20.0	18.9	19.1	19.1	18.8	8.28	0.005	0.33	NS			
Academic SC	24.4	21.4	21.4	21.0	23.6	21.8	18.6	20.4	3.32	NS	14.63	0.001			IG MC RC SG SG MC
Social SC	18.3	18.3	20.6	19.1	19.6	19.6	20.2	20.7	2.57	NS	1.44	NS			
Physical SC	19.8	20.1	19.4	21.1	16.4	18.3	18.7	18.8	9.98	0.003	1.54	NS			
Peer Ratings									1.49[1]	NS	0.98[1]	NS	0.55[1]	NS	
Social Competence	16.4	-	17.0	22.8	17.9	-	15.8	18.9							
Aggression	12.0	-	9.8	13.2	9.3	-	12.0	13.1							
Withdrawal	14.6	-	15.1	14.0	9.2	-	14.2	8.5							
Teacher Ratings									1.26[1]	NS	2.01[1]	0.04	0.70[1]	NS	
Self-control	74.9	74.2	72.8	73.6	71.7	77.0	73.9	74.2			1.01	NS			
Academic Responsibility	53.5	52.6	51.6	53.2	52.9	55.2	54.3	53.6			0.12	NS			
Social Participation	56.2	56.4	52.2	52.0	55.1	57.1	52.6	52.9			3.35	0.03			

IG: integrated gifted
SG: gifted in self-contained classrooms
MC: matched control
RC: random control
1: multivariate Fs

Table 5
Self- and Peer Ratings: Grade 10 Sample

Dependent Variable	MEANS: BOYS Gifted IG	SG	Control MC	RC	MEANS: GIRLS Gifted IG	SG	Control MC	RC	Sex F	p	MANOVAs Status F	p	Sex x Status F	p	Tukey Test Results
Self-concept									3.91[1]	0.002	2.16[1]	0.005	1.56[1]	NS	
General SC	68.2	73.9	71.2	75.1	71.8	71.7	66.2	63.4	5.00	0.03	1.09[1]	NS	4.27[1]	0.007	IG MC RC
Academic SC	60.7	54.1	56.8	54.0	62.4	57.5	55.5	51.5	0.02	NS	6.02	0.002	0.47	NS	
Social SC (opp. sex)	50.5	49.4	51.9	56.7	56.7	53.3	56.9	54.1	3.09	NS	0.66	NS	1.30	NS	
Social SC (same sex)	61.6	60.9	56.2	56.5	60.2	58.0	58.1	57.6	0.01	NS	2.30	NS	0.54	NS	
Physical SC AP	49.7	57.5	53.6	55.9	50.8	47.3	49.9	45.9	8.09	0.006	0.85	NS	3.04	0.04	
Physical SC AB	62.4	65.4	61.9	64.1	57.1	55.5	56.1	58.6	8.22	0.006	0.47	NS	0.12	NS	
Peer Ratings									5.94[1]	0.00	0.46[1]	NS	0.74[1]	NS	
Social Competence	15.0	-	12.5	14.0	19.8	-	20.3	18.4	8.23	0.006					
Aggression	6.7	-	4.6	8.5	4.9	-	5.0	4.9	2.19	NS					
Withdrawal	14.4	-	13.9	12.1	7.9	-	6.6	7.7	12.93	0.00					
Anxiety	5.8	-	7.3	5.2	5.2	-	5.2	7.1	0.10	NS					
Academic	7.3	-	6.0	6.8	3.1	-	4.3	4.8	6.85	0.02					

IG: integrated gifted
SG: gifted in self-contained classrooms
MC: matched control
RC: random control
1: multivariate Fs

Results for Sex Effect

Self-concept. The MANOVA main effect for sex effect was significant. Univariate analyses of variance indicated that mean scores were higher for boys than for girls on physical self-concept (ability and appearance) and general self-concept.

Peer Ratings. The MANOVA main effect for sex was significant, with girls having higher social competence scores and boys having higher withdrawal and academic ratings.

Discriminant Function Analyses

Discriminant function analyses were conducted to determine what aspects of social participation differentiated between (a) popular and unpopular gifted children, and (b) gifted students exhibiting high social self-concept and those exhibiting low social self-concept. Based on the frequency distribution of the MRCP peer ratings for social competence of the random control group (the group most likely to represent the population norms), integrated gifted students were divided into three groups: popular (top third), middle, and unpopular (bottom third). The popular and unpopular groups were then compared in terms of self-ratings of social participation, using the following item clusters: sports, non-sports, jobs, organizations, and getting along with others. Appendix A shows the questions that were included in each score.

The same statistical analyses were applied to the self-concept data. The integrated gifted students were divided into three groups: high social self-concept (top third), middle, and low social self-concept (bottom third). The frequency distributions of the social self-concept ratings of the random control group were used to determine these groupings. The high and low social self-concept groups were then compared with respect to the self-report ratings of social participation outlined above.

Means and standard deviations on the self-report activity clusters are reported in Tables 6 and 7 for groups high and low in social self-concept and popularity, respectively.

Table 6
Means and Standard Deviations on Self-report Activity Clusters:
High versus Low Social Self-concept Groups

	High Self-concept		Low Self-concept	
GRADE 5				
	M	SD	M	SD
Sports	5.81	1.97	3.98	1.97
Non-sports	6.60	2.34	5.94	2.26
Jobs	2.40	1.25	1.92	1.34
Organizations	2.26	1.33	1.44	1.44
Getting Along	2.87	0.91	2.38	0.93
GRADE 8				
	M	SD	M	SD
Sports	5.59	3.06	5.46	2.69
Non-sports	6.67	1.94	6.69	2.67
Jobs	2.12	1.30	1.69	1.33
Organizations	2.29	1.54	2.23	1.53
Getting Along	3.49	1.24	2.67	1.00
GRADE 10 (same sex)				
	M	SD	M	SD
Sports	7.38	2.77	4.25	3.04
Non-sports	4.75	3.24	7.27	2.89
Jobs	2.47	1.39	2.25	1.12
Organizations	2.45	1.94	2.48	1.63
Getting Along	3.59	1.55	3.73	1.90
GRADE 10 (opposite sex)				
	M	SD	M	SD
Sports	6.63	3.39	4.27	3.42
Non-sports	4.69	3.21	5.79	3.03
Jobs	2.42	1.20	2.62	1.62
Organizations	2.22	1.79	1.93	1.82
Getting Along	3.40	1.64	3.27	1.61

Table 7
Means and Standard Deviations on Self-report Activity Clusters:
Popular versus Unpopular Groups

	Popular		Unpopular	
GRADE 5				
	M	SD	M	SD
Sports	4.88	2.31	4.80	2.42
Non-sports	6.54	1.82	6.23	2.46
Jobs	2.41	1.12	2.14	1.46
Organizations	2.22	1.58	1.67	1.30
Getting Along	3.01	1.00	2.46	0.97
GRADE 8				
	M	SD	M	SD
Sports	5.09	2.69	5.39	2.69
Non-sports	7.01	1.78	7.20	2.30
Jobs	2.16	1.12	1.36	1.15
Organizations	2.51	1.53	1.91	1.32
Getting Along	3.14	1.15	2.95	1.22
GRADE 10				
	M	SD	M	SD
Sports	5.24	3.88	5.59	3.16
Non-sports	6.60	2.65	5.67	3.53
Jobs	2.94	1.03	2.44	1.30
Organizations	3.15	1.47	1.69	1.66
Getting Along	3.50	1.73	3.54	1.95

Grade 5

High versus Low Social Self-concept The results in Table 8 demonstrate that only sports and organizations maximally discriminated between gifted students exhibiting high social self-concept and those exhibiting low social self-concept. Examination of the discriminant structure coefficients reveals that sports accounted for the highest percentage of variance in the linear discriminant function (67%). The percentage of variance explained by organizations was 27%. The linear discriminant function was statistically significant with a combined $x^2_{(5)} = 11.96$, $p > 0.05$.

Table 8
Summary of Discrimant Analyses: High versus Low Social Self-concept - Elementary School

Discriminating Variables	Grade 5		Grade 8	
	Discriminant Structure Coefficient	Univariate F(1,45)	Discrimant Structure Coefficient	Univariate F(1,40)
Sports	0.82	9.93**	0.06	0.02
Non-sports	0.26	0.97	-0.01	0.00
Jobs	0.32	1.58	0.39	1.05
Organizations	0.52	4.02*	0.05	0.02
Getting Along	0.47	3.33	0.91	5.64*

*p < 0.05
**p < 0.01

Popular versus Unpopular

As shown in Table 9, none of the social activity variables differentiated between popular and unpopular gifted students. The linear discriminant function yielded a combined $x^2_{(5)} = 4.66$ which was not statistically significant ($p > 0.05$).

Table 9
Summary of Discriminant Analyses: Popular versus Unpopular Integrated Students - Elementary School

Discriminating Variables	Grade 5		Grade 8	
	Discriminant Structure Coefficient	Univariate F(1,45)	Discrimant Structure Coefficient	Univariate F(1,37)
Sports	0.04	0.01	-0.09	0.74
Non-sports	0.22	0.25	-0.08	0.08
Jobs	0.32	0.52	0.58	4.67*
Organizations	0.58	1.72	0.36	1.73
Getting Along	0.84	3.67	0.13	0.23

*p < 0.05

Grade 8

High versus Low Social Self-concept

The results in Table 8 demonstrate that getting along with others, which accounted for 83% of the variance in the linear discriminant function, was the only social activity that maximally discriminated between the two groups of students. Overall, however, the linear discriminant function was non-significant, with a combined $x^2_{(5)} = 5.84$, $p > 0.05$.

Popular versus Unpopular

The results in Table 9 reveal that jobs was the only variable to maximally differentiate popular from unpopular gifted students; 22% of the variance was explained. The linear discriminant function was statistically significant with a combined $x^2_{(5)} = 10.88$, $p < 0.05$.

Grade 10

High versus Low Social Self-concept

As shown in Table 10, when gifted students assessed their own social self-concept with respect to the same sex, sports and non-sports were significant variables in maximally discriminating between the two groups of students. Sports explained the most variance in the discriminant function (92%); non-sports accounted for 31% of the variance. The linear discriminant function was statistically significant, with an overall $x^2_{(5)} = 18.73$, $p < 0.01$.

Table 10
Summary of Discriminant Analyses: High versus Low Self-concept - High School

	Same Sex		Opposite Sex	
Discriminating Variables	Discriminant Structure Coefficient	Univariate F(1,31)	Discrimant Structure Coefficient	Univariate F(1,28)
Sports	-0.58	9.61**	0.70	3.63
Non-sports	0.44	5.53*	-0.36	0.93
Jobs	-0.09	0.25	-0.14	0.15
Organizations	0.01	0.00	0.16	0.19
Getting Along	0.04	0.05	0.10	0.07

*$p < 0.05$
**$p < 0.01$

Interestingly, none of the social activity variables differentiated between gifted students having high and low social self-concepts, when these self-ratings were relative to the opposite-sex situations. In this case, the linear discriminant function was not statistically significant ($x^2_{(5)} = 5.91$, $p < 0.05$.

Popular versus Unpopular

The results in Table 11 show that only organizations maximally discriminated between popular and unpopular gifted students; 45% of the variance was explained. The linear discriminant function was statistically significant with a combined $x^2_{(5)} = 11.89$, $p < 0.05$.

Table 11
Summary of Discriminant Analyses: Popular versus Unpopular Integrated Students - High School

Discriminating Variables	Discriminant Structure Coefficient	Univariate F(1,29)
Sports	-0.07	0.71
Non-sports	0.21	0.71
Jobs	0.30	1.48
Organizations	0.64	6.68*
Getting Along	-0.01	0.34

*$p < 0.05$

Correlations Between IQ and Social Competence

Although the two gifted and two control groups were significantly different with respect to IQ (by definition), there was some variability within each of the four status groups. Of particular interest is the relation between IQ and social competence within three of the groups: integrated gifted, self-contained gifted, and random controls.[2] Was higher IQ related to social competence in different ways in these three groups? Pearson correlation coefficients were computed for IQ and measures of social competence.

A second set of correlations were calculated to determine whether acceptance by peers was related to the difference in IQ between the gifted and their control classmates. Within each integrated class, mean IQ scores were calculated for the gifted and for the combined matched and random controls. Differences between these two means were then correlated for all classes at a given grade level with the mean peer ratings of social competence/leadership given to the gifted in the class.

Grade 5

IQ and Social Competence

In the integrated gifted group, peer ratings of social competence were negatively correlated with IQ ($r = -0.22$, $p < 0.04$). None of the teachers' rating scale factors correlated significantly with IQ. There were no significant correlations between IQ and social competence in the self-contained gifted (SG) group. Within the normal range of IQ represented in the random control (RC) group, higher IQ was correlated with peer ratings of social competence ($r = 0.52$, $p < 0.001$), teacher ratings of academic responsibility ($r = 0.43$, $p < 0.002$), social participation ($r = 0.47$, $p < 0.002$), self-control ($r = 0.46$, $p < 0.002$), and feelings about school ($r = 0.27$, $p < 0.03$)

Within-class IQ Differences and Peer Ratings of Social Competence

In the 28 classes studied, the mean IQ difference between integrated gifted children and controls was 22.04 ($SD = 7.90$). The correlation between IQ difference and MRCP peer ratings of social competence was significant ($r = -0.33$, $p < 0.05$): the greater the IQ difference, the lower the peer ratings of social competence leadership received for the gifted child.

Grade 8

IQ and Social Competence

There was a significant negative correlation between IQ and self-report of social competence for the integrated gifted group ($r = -0.23$, $p < 0.05$). The IG group, however, displayed no significant positive correlations between teacher ratings of social competence and IQ.

The pattern for the self-contained gifted group was similar to that of the integrated gifted group, with a negative correlation (approaching statistical significance) between IQ and self-report of social competence (at $r = 0.20$, $p < 0.10$). As well, there was a negative correlation between IQ and teacher report of social participation ($r = -0.24$, $p < 0.05$). In the random control group, IQ correlated with teacher ratings of academic responsibility ($r = 0.41$, $p < 0.02$), social participation ($r = 0.30$, $p < 0.06$), and self-control ($r = 0.37$, $p < 0.03$). There was also a trend for the self-report of social competence to be negatively correlated with IQ ($r = -0.19$, $p < 0.09$).

Within-class IQ Differences and Peer Ratings of Social Competence

In the 26 classes studied, the mean IQ difference between gifted and control subjects was 23.87 ($SD = 8.3$). The correlation between IQ difference and peer ratings of social competence was not significant.

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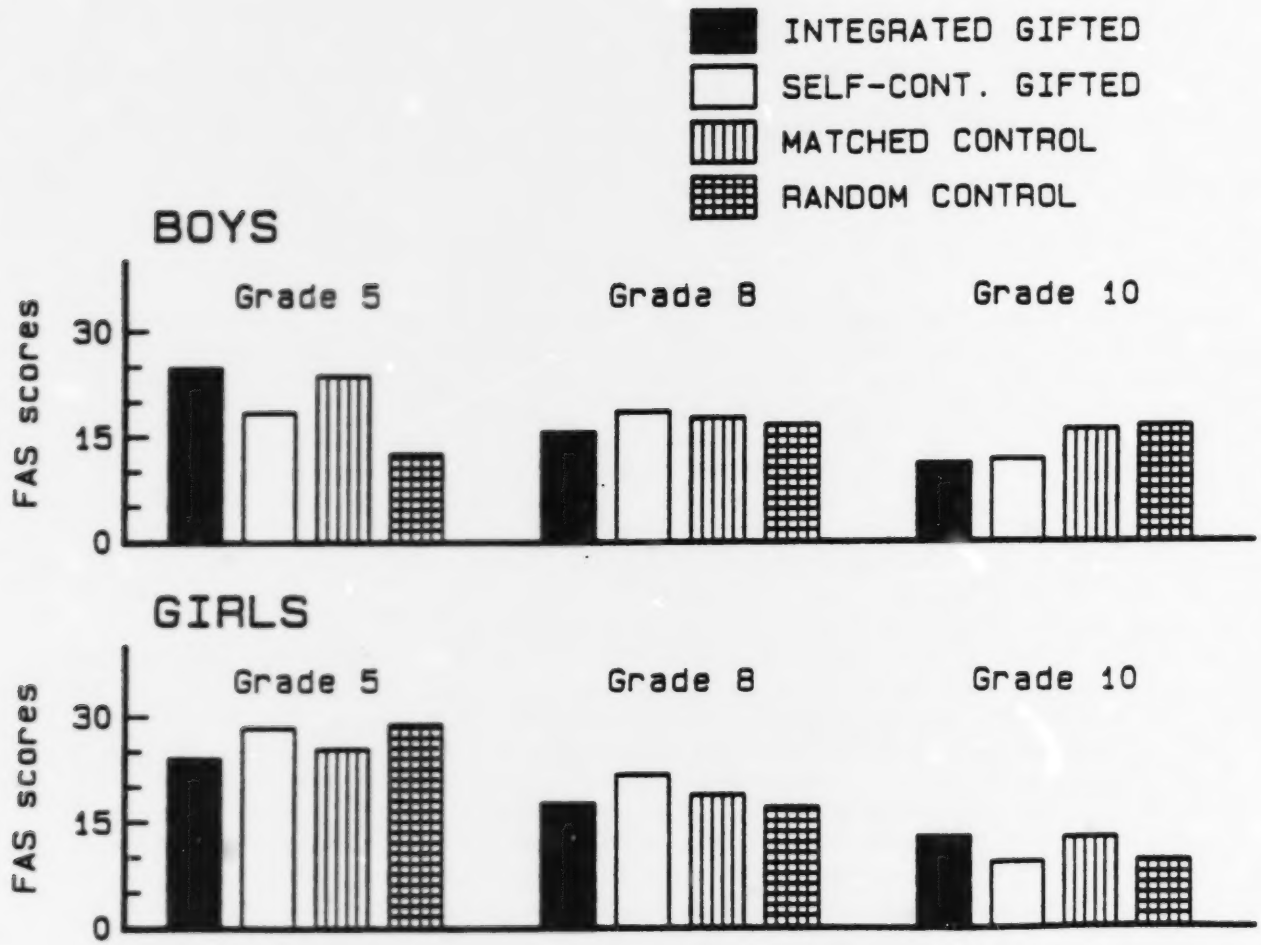
[2]Again, the random controls were assumed to be more representative of the general population than the matched controls.

Figure 4
Feelings About School: Means



Grade 10

IQ and Social Competence

For the integrated gifted group, the correlations were mainly negative, although none of them were significant. There were marginally significant negative correlations between IQ and social self-concept (opposite sex) (r = -0.17, p < 0.08) and peer ratings of social competence (r = -0.16, p < 0.10).

None of the correlations was significant for the self-contained gifted group at this grade level probably because the sample size was quite small. As in Grade 5 (but not in Grade 8), IQ correlated positively with peer ratings of social competence (r = 0.20, p < 0.07) for the random control group. Negative correlations were found between IQ and social self-concept (SDQ opposite sex) (r -0.18, p < 0.09) and social self-concept (SDQ same sex) (r = -0.29, p < 0.02).

Within-class IQ Differences and Peer Ratings of Social Competence

In the 32 classes studied, the mean difference in IQ between gifted and control subjects was 17.41 (SD = 5.48). The correlation between IQ difference and peer ratings of social competence was not significant.

Feeling About School

The wording of the FAS was suitable for use in all three grades. A grade x sex x group status analysis of variance was performed on the data. Although group status was not a significant source of variation, grade level was (F = 26.27, p < 0.001): the mean FAS scores were lower in the higher grades than in the lower grades, indicating that older children's feelings about the school experience were less positive. There was also a significant grade x sex interaction (F = 4.537, p < 0.02), with girls having higher scores than boys in Grade 5, approximately the same in Grade 8, and lower in Grade 10. These data are depicted pictorially in Figure 4.

DISCUSSION

Summary of Findings

Do the self-concepts (academic, social, physical, and global) of bright pupils differ markedly from those of their less capable peers? On only one aspect of self-concept did the groups differ significantly: perceived cognitive competence. Not surprisingly, academic self-concept was higher in the integrated gifted group than in the two control groups; this was true in all three grades. In Grade 8 only, the self-contained gifted had higher perceived cognitive competence scores than did the matched controls; in the other grades (5 and 10), the self-contained gifted did not differ significantly from the control groups.

Are the self-concepts of bright pupils in self-contained settings different from those of their counterparts in more integrated settings? Again, the only significant difference occurred with respect to perceived cognitive competence: in Grades 5 and 8, the integrated gifted had higher academic self-concept scores than did the self-contained gifted. Results were in the same direction for the students in Grade 10. Though equally gifted, then, the self-contained gifted saw themselves as less academically competent than did their counterparts in integrated classes.

How well are bright pupils in integrated settings accepted by their peers? The integrated gifted were seen as more socially competent/leaders than were the control groups - but only in Grade 5.

Do these three populations (self-contained gifted, integrated gifted, and control) differ in terms of their social participation, ease in social situations, or assertive behaviour? According to teacher

reports, yes, but only in Grade 5, and not for all of the groups. In Grade 5, teacher ratings of social participation indicated greater participation by both of the gifted groups than by the random control group. Teachers also rated the integrated gifted as showing more self-control and academic responsibility than did the random control group. It is interesting to note here that teachers did not rate the self-contained gifted as showing greater academic responsibility or self-control.

What differentiates popular and unpopular talented children in integrated settings? There seems to be no overall answer. Popularity seems to be increasingly related to self-report of involvement in organizations and responsibilities reflected in jobs, perhaps emphasizing the leadership aspect of the peer ratings.

What social activities discriminate happy (high self-concept) from unhappy gifted children? By self-report those with higher social self-concept saw themselves as more involved in sports, at least in Grades 5 and 10; getting along with others characterized the high self-concept group in Grade 8.

Are there any important age or sex differences with regard to the above-mentioned relations? Do any of these effects covary with IQ, even among exceptionally bright children?

The only effect consistent throughout the grades was the greater perceived cognitive competence reported by the integrated gifted - greater than the control groups and the self-contained gifted. Teachers reported greater academic responsibility, social participation, and self-control for the integrated gifted only in Grade 5. Contrary to predictions, there were few salient sex differences with regard to the social development of gifted children.

While higher IQ within the normal range was generally associated with enhanced social competence, the correlations tended to be in the negative direction for the gifted groups. The brighter children among the gifted groups tended to achieve lower ratings of social competence. As well, the greater the difference in IQ between the gifted and the control children in the same class, the lower the peer acceptance of the gifted child.

Do these three populations (integrated gifted, gifted in self-contained classes, not identified as gifted) differ in terms of their attitudes toward school? No, but there were differences by grade and sex: both boys and girls in the higher grades had less positive feelings about school. This seemed to be more pronounced for girls than for boys: girls felt better about school in Grade 5, worse in Grade 10.

Implications of these Findings

These results in general portray the gifted child as a relatively well adjusted individual. There is little support here for the folk notion of the bright child as a social isolate, or for the myth that the intellectually gifted are destined to excel in all areas of their development.

Inferences from research on the social development of gifted children must take into account developmental differences. Gifted elementary school children were held high in the esteem of their peers in this as in other studies. This effect totally disappeared in later years.

Some caution is indicated in the interpretation of these findings because of several limitations of the study. The first of these pertains to the identification of the gifted sample. As in many other studies of gifted children, it was necessary for us to rely on pre-existing group test data. The alternative - administering group tests of intelligence to all children in the target grades in each of the schools that participated - was simply unfeasible. These group tests tend to have a rather low ceiling, and are therefore of only limited value for certain comparisons, such as comparisons in which highly gifted children are compared with moderately gifted. Despite the limited IQ ceiling, the brighter children in our sample tended to achieve lower peer acceptance than their moderately gifted peers. Thus, the results of our study might have been completely different had we looked at the one-in-a-thousand "genius" rather than the uppermost three per cent of the population.

Furthermore, as mentioned above, these group tests tap only certain gifted behaviours. For this reason, some gifted children were not included - the artistically creative, as well as those whose cognitive strengths are specific to certain areas of intellect, who are thereby missed by measures of global intellectual functioning.

These findings may not apply to schools at all socio-economic levels. Our sample was restricted to urbanized areas of the Regional Municipality of Ottawa-Carleton, where parental education levels exceed the national average. Even so, the peer acceptance of gifted children was lower in classrooms in which there was a high discrepancy between the IQs of the gifted and control youngsters. The social status of gifted children in less privileged areas may be quite different from the optimistic situation reported here.

There are certain limitations to the comparability of our gifted samples from self-contained and integrated programs. Both samples were drawn from urban areas within the same municipality. Importantly, there was no self-selection factor for those in integrated settings. These youngsters did not have the option of participating in self-contained classes. However, the subjects were not randomly assigned to self-contained or integrated programs. Although this would have provided a more definitive guarantee of comparability of the samples, this would have been impossible under existing special education legislation in Ontario as in most other jurisdictions.

As in most recent studies of the socio-emotional adjustment of any large population, the volunteer effect may have attenuated the findings. While permission for participation was obtained from the overwhelming majority of the parents of the gifted children, one wonders whether the non-consenters were in fact children experiencing peer relations difficulties. In at least one special class for the gifted, the teacher informed the research worker that the four consents that were missing represented the only four children who, in his opinion, were experiencing real peer relations problems.

Many of the earlier studies reviewed above suggested that gifted children in self-contained programs displayed lower self-concepts and less satisfying peer relations than their counterparts in integrated settings. The results of the present study, however, indicate that the enhanced academic input provided by special classes can be accomplished without detriment (or benefit) to the children's social adjustment. It must be emphasized that this study is not intended as an evaluation of any program. In order to adequately evaluate the impact of special class programming on gifted youngsters, it would be necessary to establish the degree to which their cognitive as well as social development was facilitated. That information is not available here.

The findings regarding attitudes toward school merit particular attention. We found no significant differences between gifted and non-gifted children in this respect. This may be interpreted in several ways. We might expect academically talented children to feel more positively than others about school, just as the athlete should feel about the gym, the actor about the theatre. On the other hand, the gifted child may have higher standards and tend to be more critical of environments and figures of authority. Nevertheless, those who plan educational programs for the gifted should redouble their efforts to capture the interest of the children.

Within the overall pattern of few significant differences between gifted and non-gifted populations, there do appear to be certain specific ages and problem areas worthy of mention. First of all, it should be noted that the peer acceptance of gifted pupils in Grade 8 seems more problematic than that of either Grade 5 or Grade 10 children. In contrast with the Grade 5 data, which indicated greater peer acceptance for gifted pupils than controls, the Grade 8 gifted pupils received slightly (but not significantly) fewer nominations for social competence than controls. Teachers have often shared with us their particular concern with adjustment problems at the junior high school level. The lowered acceptance of brightness at this age may corroborate their concerns.

In terms of aspects of social development, there are also certain areas of concern. The gifted children's self-ratings of social competence were lower than one would have expected from their peer nominations - especially in Grades 5 and 10. This may indicate that the gifted are not good judges of peers' feelings about their talents. It may also be reflective of the very high standards the gifted

children impose upon themselves and others. If there is a general adjustment problem among gifted children, it is likely to be internalized in nature. Gifted children do not really seem at risk for peer rejection, but may not have the self-confidence in social situations that they might.

It may be profitable to conceptualize the gifted population as a heterogeneous one, rather than searching for attributes that pertain to the entire group. Many parents are deeply concerned about the social adjustment of their gifted youngsters, and about the detrimental effects of academic talent on their children's peer relations. Rather than dismiss these as isolated or exaggerated concerns, they should be taken seriously. The minority of gifted children who do suffer peer relations difficulties may require specific assistance in overcoming them.

In that regard, there are several findings here that are applicable to the counseling of those gifted children that are in need of guidance. While the pattern of behaviours that discriminate socially successful from socially unsuccessful gifted children is not entirely discernible from these findings, it does appear that the best accepted gifted children are those who are involved in activities with peers. Sports do not appear to be the easy ticket to social acceptance that previous studies suggest, but still may have some connection with feelings of adequacy in social situations. Thus, gifted children may be faced with a trade-off. If they pursue intellectual activities which entail being alone, they may not achieve the popularity that is otherwise available to them. They may choose to pay this price; reassurance from adults that this is entirely acceptable could be helpful. If they feel that peer acceptance is crucial for them, on the other hand, they may choose to diversify their activities somewhat. Adults should not make these decisions for them, but may be able to help the gifted children appreciate the dilemma.

APPENDIX A

Self-Report of Activities

SCBSPT SPORTS

2. Compared with other kids your age, how much time do you spend playing sport #1?
3. How much time do you spend playing sport #2?
4. How much time do you spend playing sport #3?
5. Compared with other kids your age, how good are you in sport #1?
6. How good are you in sport #2?
7. How good are you in sport #3?

SCBCNSPT NON-SPORTS (Hobbies, activities, games)

9. Compared with other kids your age, how much time do you spend on activity #1?
10. How much time do you spend on activity #2?
11. How much time do you spend on activity #3?
12. Compared with other kids your age, how good are you at doing activity #1?
13. How good are you at doing activity #2?
14. How good are you at doing activity #3?

SCBJOB JOBS

16. Compared with the other kids your age, how well do you do job #1?
17. How well do you do job #2?
18. How well do you do job #3?

SCBCOR6 ORGANIZATIONS

20. Compared with other kids your age, how active are you in organization #1?
21. How active are you in organization #2?
22. How active are you in organization #3?

SCBCWITH GETTING ALONG WITH OTHERS

25. Compared with other kids your age, how well do you get along with your brothers and sisters?
26. How well do you get along with other children?
27. How well do you behave with your parents?

SCBCACT ACTIVITIES TOTAL NUMBER AND INVOLVEMENT

1. How many sports do you like to take part in? (e.g. swimming, baseball, skating, etc.)
   Select 0 1 2 or 3
8. How many hobbies, activities, or games other than sports do you like to take part in? (e.g. stamps, reading, crafts, piano, etc.) Select 0 1 2 or 3
15. For how many jobs or chores are you responsible? Select 0 1 2 or 3

SCBCJOC SOCIAL TOTAL TIME AND INVOLVEMENT

19. To how many organizations, clubs, teams or groups do you belong?

Select 0 1 2 or 3

23. About how many close friends do you have?

Select 0 (none)
1 (1 friend)
2 (2 or 3 friends)
3 (4 friends or more)

24. About how many times a week do you do things with your friend(s)?

Select 1 (less than once)
2 (once or twice)
3 (three times or more)

28. How well do you play and work by yourself?

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